**Center Independent Research & Development: GSFC IRAD**

# Goddard Multi-sensor Airborne Snow Sensing Suite

Completed Technology Project (2015 - 2016)

## Project Introduction

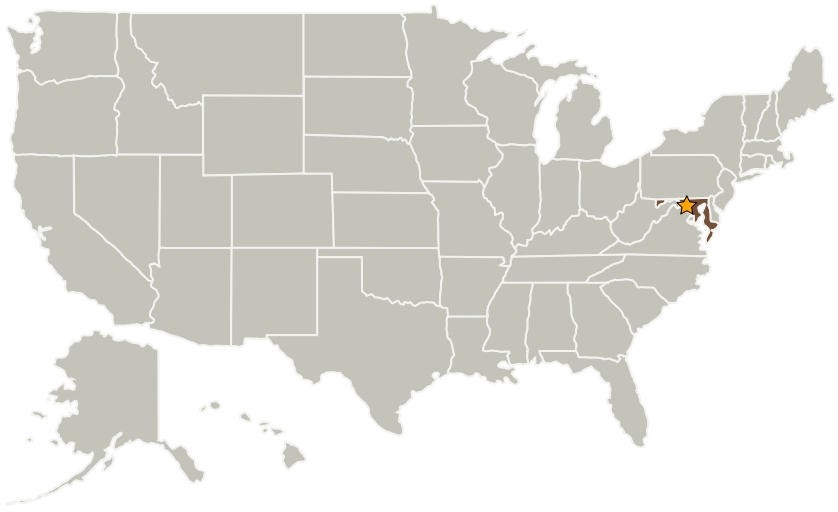
This project aims to prepare a key component of a multi-sensor airborne system that can be used by the snow remote sensing community to collect snow datasets and enable future snow missions.

The international snow community believes a multi-sensor approach to snow remote sensing offers the best hope for accurate snow retrievals. However, the community does not have multi-sensor datasets to use to develop retrieval algorithms. A multi-sensor airborne snow suite used in a community airborne field campaign would be able to collect such datasets. This project will focus on preparing a key element of that sensor suite: a passive microwave imager operating at several wavelengths sensitive to snow. The goal of this project is to make ready NASA's Airborne Earth Science Microwave Imaging Radiometer (AESMIR) for snow observations.

## Anticipated Benefits

The Snow and Cold Land Processes (SCLP) mission was identified in the first Earth Science Decadal Survey as a mission that NASA should pursue. A multi-sensor mission concept requires risk reduction for each sensor type as well as among the various sensors. This project will provide a working copy of the passive microwave sensor for risk reduction activities including testing calibration techniques and science algorithm development.

## Primary U.S. Work Locations and Key Partners




AESMIR in

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## Organizational Responsibility

**Responsible Mission Directorate:**

Mission Support Directorate (MSD)

**Lead Center / Facility:**

Goddard Space Flight Center (GSFC)

**Responsible Program:**

Center Independent Research & Development: GSFC IRAD

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| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Goddard Space Flight Center(GSFC) | Lead Organization | NASA Center | Greenbelt, Maryland |

| Primary U.S. Work Locations |
|---|
| Maryland |

## Images


**AESMIR passive microwave imager**
AESMIR in *(https://techport.nasa.gov/image/19108)*

## Project Management

**Program Manager:**
Peter M Hughes

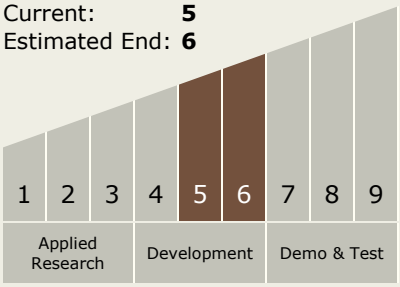
**Project Manager:**
Matt Mcgill

**Principal Investigator:**
Edward J Kim

**Co-Investigator:**
Derek L Hudson

## Technology Maturity (TRL)

Start: **5**
Current: **5**
Estimated End: **6**




## Technology Areas

**Primary:**

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves